1. (Cancelled)

2. (Currently Amended) A system for producing an output sound field that is representative of an input sound field, comprising:

a microphone array for receiving the input sound field and producing therefrom a microphone signal ("P_{in}") representative of the input sound field wherein P_{in} comprises B-format channels, an FL (front left) channel, and an FR (front right) channel; an encoder for producing an encoded signal ("S_{out}") from P_{in} wherein S_{out} comprises an ITU-compatible six channel signal; a decoder for producing a decoded signal ("P_{out}") from S_{out} wherein P_{out} comprises B-format channels, an FL channel, and an FR channel; and a plurality of speakers for producing the output sound field from P_{out}, ~~The system of Claim 1~~ wherein the hybrid microphone array is comprised of:

at least 6 microphones; and a baffle including a substantially ellipsoidal structure.

3. (Previously Presented) The system of Claim 2 wherein four of said microphones are arranged in a tetrahedron.

4. (Previously Presented) The system of Claim 3 wherein the plurality of speakers produces the output sound field from S_{out}.

5. (Previously Presented) The system of Claim 4 wherein the plurality of speakers are arranged in a 2D arrangement.

6. (Cancelled)

7. (Currently Amended) A system for producing an output sound field that is representative of an input sound field, comprising:

a microphone array for receiving the input sound field and producing therefrom a microphone signal ("P_{in}") representative of the input sound field wherein P_{in} comprises B-format channels, an FL (front left) channel, and an FR (front right) channel; an encoder for producing an encoded signal ("S_{out}") from P_{in} wherein S_{out} comprises an ITU-compatible six channel signal; a decoder for producing a decoded signal ("P_{out}") from S_{out} wherein P_{out} comprises B-format channels, an FL channel, and an FR channel; and a plurality of speakers for producing the output sound field from P_{out}, ~~The system of Claim 1~~ wherein S comprises the quantities:

$$\begin{vmatrix} s(L,FL) & s(L,FR) & s(L,W) & s(L,X) & s(L,Y) & s(L,Z) \\ s(R,FL) & s(R,FR) & s(R,W) & s(R,X) & s(R,Y) & s(R,Z) \\ s(C,FL) & s(C,FR) & s(C,W) & s(C,X) & s(C,Y) & s(C,Z) \\ s(SC,FL) & s(SC,FR) & s(SC,W) & s(SC,X) & s(SC,Y) & s(SC,Z) \\ s(SL,FL) & s(SL,FR) & s(SL,W) & s(SL,X) & s(SL,Y) & s(SL,Z) \\ s(SR,FL) & s(SR,FR) & s(SR,W) & s(SR,X) & s(SR,Y) & s(SR,Z) \end{vmatrix}$$

wherein:

L represents a left speaker channel for an ITU-compatible six channel signal;

R represents a right speaker channel for an ITU-compatible six channel signal;

C represents a center speaker channel for an ITU-compatible six channel signal;

SC represents a surround center speaker channel for an ITU-compatible six channel signal;

SL represents a surround left speaker channel for an ITU-compatible six channel signal;

SR represents a surround right speaker channel for an ITU-compatible six channel signal;

FL represents the front left speaker channel;

FR represents the front right speaker channel;

W represents a B-format channel;

X represents a B-format channel;

Y represents a B-format channel;

Z represents a B-format channel;

and wherein

$s(\alpha, \beta)$ represents a transformation quantity relating the respective α and β channels.

8. (Previously Presented) The system of Claim 7 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	.425
0	0	.601	−.736	0	.425
0	0	.601	−.368	.638	−.425
0	0	.601	−.368	−.638	−.425

9. (Previously Presented) The system of Claim 7 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	−.425
0	0	.601	−.736	0	−.425
0	0	.601	−.368	.638	.425
0	0	.601	−.368	−.638	.425

10. (Previously Presented) The system of Claim 7 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	.425
0	0	.601	−.425	0	.736
0	0	.601	−.425	.736	0
0	0	.601	−.425	−.736	0

11. (Previously Presented) The system of Claim 7 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	−.425	0	.736
0	0	.601	−.531	.638	−.184
0	0	.601	−.531	−.638	−.184

12. (Previously Presented) The system of Claim 7 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.425	0	−.736
0	0	.601	−.850	0	0
0	0	.601	−.106	.638	.552
0	0	.601	−.106	−.638	.552

13. (Previously Presented)The system of Claim 7 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	0	0	.850
0	0	.601	−.368	.736	.213
0	0	.601	−.368	−.736	.213

14-16. (Cancelled)

17. (Currently Amended) A system for producing an output sound field that is representative of an input sound field, comprising:

a microphone array for receiving the input sound field and producing therefrom a microphone signal ("P_{in}") representative of the input sound field wherein P_{in} comprises B-format channels, an FL (front left) channel, and an FR (front right) channel; an encoder for producing an encoded signal ("S_{out}") from P_{in} wherein S_{out} comprises an ITU-compatible six channel signal; a decoder for producing a decoded signal ("P_{out}") from S_{out} wherein P_{out} comprises B-format channels, an FL channel, and an FR channel; and a plurality of speakers for producing the output sound field from P_{out}, ~~The system of Claim 16~~ wherein:

a first two of said speakers are positioned so that:

azimuthally, one is approximately 8 degrees to the left of and the other is approximately 8 degrees to the right of the 12 o'clock position of a listener; and

elevationally, both are positioned substantially on a horizontal plane that intersects the listener's ears; a second two of said speakers are positioned so that:

azimuthally, one is approximately 45 degrees to the left of and the other is approximately 45 degrees to the right of the 12 o'clock position of the listener; and

elevationally, both are positioned substantially on said horizontal plane;

a third two of said speakers are positioned so that:

azimuthally, one is approximately 135 degrees to the left of and the other is approximately 135 degrees to the right of the 12 o'clock position of the listener; and elevationally, both are positioned substantially on said horizontal plane;

a fourth two of said speakers are positioned so that:

azimuthally, one is approximately 90 degrees to the left of and the other is approximately 90 degrees to the right of the 12 o'clock position of the listener; and elevationally, both are positioned above said horizontal plane; and a fifth two of said speakers are positioned so that:

azimuthally, one is approximately 90 degrees to the left of and the other is approximately 90 degrees to the right of the 12 o'clock position of the listener; and elevationally, both are positioned below said horizontal plane.

18. (Previously Presented) The system of Claim 17 further comprising at least two additional speakers.

19. (Previously Presented) The system of Claim 18 wherein:

sixth two of said speakers are positioned so that:

azimuthally, one is approximately 172 degrees to the left of and the other is approximately 172 degrees to the right of the 12 o'clock position of a listener; and

elevationally, both are positioned substantially on a horizontal plane that intersects the listener's ears.

20. (Cancelled)

21. (Currently Amended) A system for providing an encoded signal ("S_{out}") representative of an input sound field, comprising:

a microphone array for receiving the input sound field and producing therefrom a microphone signal ("P_{in}") representative of the input sound field wherein P_{in} comprises B-format channels, an FL (front left) channel, and an FR (front right) channel; an encoder for producing S_{out} from P_{in} wherein S_{out} comprises an ITU-compatible six channel signal, wherein S comprises the quantities:

$$\begin{vmatrix} s(L,FL) & s(L,FR) & s(L,W) & s(L,X) & s(L,Y) & s(L,Z) \\ s(R,FL) & s(R,FR) & s(R,W) & s(R,X) & s(R,Y) & s(R,Z) \\ s(C,FL) & s(C,FR) & s(C,W) & s(C,X) & s(C,Y) & s(C,Z) \\ s(SC,FL) & s(SC,FR) & s(SC,W) & s(SC,X) & s(SC,Y) & s(SC,Z) \\ s(SL,FL) & s(SL,FR) & s(SL,W) & s(SL,X) & s(SL,Y) & s(SL,Z) \\ s(SR,FL) & s(SR,FR) & s(SR,W) & s(SR,X) & s(SR,Y) & s(SR,Z) \end{vmatrix}$$

wherein:

L represents a left speaker channel for an ITU-compatible six channel signal;

R represents a right speaker channel for an ITU-compatible six channel signal;

C represents a center speaker channel for an ITU-compatible six channel signal;

SC represents a surround center speaker channel for an ITU-compatible six channel signal;

SL represents a surround left speaker channel for an ITU-compatible six channel signal;

SR represents a surround right speaker channel for an ITU-compatible six channel signal;

FL represents the front left speaker channel;

FR represents the front right speaker channel;

W represents a B-format channel;

X represents a B-format channel;

Y represents a B-format channel;

Z represents a B-format channel;

wherein

$s(\alpha, \beta)$ represents a transformation quantity relating the respective α and β channels,

~~The system of Claim 20~~ wherein the hybrid microphone array is comprised of:

at least 6 microphones; and a baffle including a substantially ellipsoidal structure.

22. (Previously Presented) The system of Claim 21 wherein four of said microphones are arranged in a tetrahedron.

23-24. (Cancelled)

25. (Currently Amended) The system of Claim ~~24~~ 21 wherein S comprises the following approximate quantities:

$$\begin{vmatrix} .850 & 0 & 0 & 0 & 0 & 0 \\ 0 & .850 & 0 & 0 & 0 & 0 \\ 0 & 0 & .601 & .736 & 0 & .425 \\ 0 & 0 & .601 & -.736 & 0 & .425 \\ 0 & 0 & .601 & -.368 & .638 & -.425 \\ 0 & 0 & .601 & -.368 & -.638 & -.425 \end{vmatrix}$$

26. (Currently Amended) The system of Claim ~~24~~ 21 wherein S comprises the following approximate quantities:

$$\begin{vmatrix} .850 & 0 & 0 & 0 & 0 & 0 \\ 0 & .850 & 0 & 0 & 0 & 0 \\ 0 & 0 & .601 & .736 & 0 & -.425 \\ 0 & 0 & .601 & -.736 & 0 & -.425 \\ 0 & 0 & .601 & -.368 & .638 & .425 \\ 0 & 0 & .601 & -.368 & -.638 & .425 \end{vmatrix}$$

27. (Currently Amended) The system of Claim ~~24~~ 21 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	.425
0	0	.601	−.425	0	.736
0	0	.601	−.425	.736	0
0	0	.601	−.425	−.736	0

28. (Currently Amended) The system of Claim ~~24~~ 21 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	−.425	0	.736
0	0	.601	−.531	.638	−.184
0	0	.601	−.531	−.638	−.184

29. (Currently Amended) The system of Claim ~~24~~ 21 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.425	0	−.736
0	0	.601	−.850	0	0
0	0	.601	−.106	.638	.552
0	0	.601	−.106	−.638	.552

30. (Currently Amended) The system of Claim ~~24~~ 21 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	0	0	.850
0	0	.601	−.368	.736	.213
0	0	.601	−.368	−.736	.213

31-32. (Cancelled)

33. (Currently Amended) A method for producing an output sound field that is representative of an input sound field, comprising the steps of:

providing a microphone array for receiving the input sound field and producing therefrom a microphone signal ("P_{in}") representative of the input sound field wherein P_{in} comprises B-format channels, an FL channel, and an FR channel;

producing an encoded signal ("S_{out}") from P_{in} wherein S_{out} comprises an ITU-compatible six channel signal; producing a decoded signal ("P_{out}") from S_{out} wherein P_{out} comprises B-format channels, an FL channel, and an FR channel; and

providing a plurality of speakers for producing the output sound field from P_{out} to thereby represent the input sound field, wherein S comprises the quantities:

$$\begin{vmatrix} s(L,FL) & s(L,FR) & s(L,W) & s(L,X) & s(L,Y) & s(L,Z) \\ s(R,FL) & s(R,FR) & s(R,W) & s(R,X) & s(R,Y) & s(R,Z) \\ s(C,FL) & s(C,FR) & s(C,W) & s(C,X) & s(C,Y) & s(C,Z) \\ s(SC,FL) & s(SC,FR) & s(SC,W) & s(SC,X) & s(SC,Y) & s(SC,Z) \\ s(SL,FL) & s(SL,FR) & s(SL,W) & s(SL,X) & s(SL,Y) & s(SL,Z) \\ s(SR,FL) & s(SR,FR) & s(SR,W) & s(SR,X) & s(SR,Y) & s(SR,Z) \end{vmatrix}$$

wherein:

L represents a left speaker channel for an ITU-compatible six channel signal;

R represents a right speaker channel for an ITU-compatible six channel signal;

C represents a center speaker channel for an ITU-compatible six channel signal;

SC represents a surround center speaker channel for an ITU-compatible six channel signal;

SL represents a surround left speaker channel for an ITU-compatible six channel signal;

SR represents a surround right speaker channel for an ITU-compatible six channel signal;

FL represents the front left speaker channel;

FR represents the front right speaker channel;

W represents a B-format channel;

X represents a B-format channel;

Y represents a B-format channel;

Z represents a B-format channel;

wherein

s(α, β) represents a transformation quantity relating the respective α and β channels, and

~~The method of Claim 32~~ wherein the hybrid microphone array is comprised of:

at least 6 microphones; and a substantially ellipsoidal baffle.

34. (Previously Presented) The method of Claim 33 wherein four of said microphones are arranged in a tetrahedron.

35. (Previously Presented) The method of Claim 34 wherein the plurality of speakers produces the output sound field from S_{out}.

36. (Previously Presented) The method of Claim 35 wherein the plurality of speakers are provided in a 2D arrangement.

37-38. (Cancelled)

39. (Currently Amended) The method of Claim ~~38~~ 33 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	.425
0	0	.601	−.736	0	.425
0	0	.601	−.368	.638	−.425
0	0	.601	−.368	−.638	−.425

40. (Currently Amended) The method of Claim ~~38~~ 33 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	−.425
0	0	.601	−.736	0	−.425
0	0	.601	−.368	.638	.425
0	0	.601	−.368	−.638	.425

41. (Currently Amended) The method of Claim ~~38~~ 33 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	.425
0	0	.601	−.425	0	.736
0	0	.601	−.425	.736	0
0	0	.601	−.425	−.736	0

42. (Currently Amended) The method of Claim ~~38~~ 33 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	−.425	0	.736
0	0	.601	−.531	.638	−.184
0	0	.601	−.531	−.638	−.184

43. (Currently Amended) The method of Claim ~~38~~ 33 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.425	0	−.736
0	0	.601	−.850	0	0
0	0	.601	−.106	.638	.552
0	0	.601	−.106	−.638	.552

44. (Currently Amended) The method of Claim ~~38~~ 33 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	0	0	.850
0	0	.601	−.368	.736	.213
0	0	.601	−.368	−.736	.213

45-47. (Cancelled)

48. (Currently Amended) A method for producing an output sound field that is representative of an input sound field, comprising the steps of:

providing a microphone array for receiving the input sound field and producing therefrom a microphone signal ("P_{in}") representative of the input sound field wherein P_{in} comprises B-format channels, an FL channel, and an FR channel;

producing an encoded signal ("S_{out}") from P_{in} wherein S_{out} comprises an ITU-compatible six channel signal; producing a decoded signal ("P_{out}") from S_{out} wherein P_{out} comprises B-format channels, an FL channel, and an FR channel; and

providing a plurality of speakers for producing the output sound field from P_{out} to thereby represent the input sound field wherein the hybrid microphone array is comprised of:

at least 6 microphones; and a substantially ellipsoidal baffle,

~~The method of Claim 47~~ wherein:

a first two of said speakers are positioned so that:

azimuthally, one is approximately 8 degrees to the left of and the other is approximately 8 degrees to the right of the 12 o'clock position of a listener; and

elevationally, both are positioned substantially on a horizontal plane that intersects the listener's ears; a second two of said speakers are positioned so that:

azimuthally, one is approximately 45 degrees to the left of and the other is

approximately 45 degrees to the right of the 12 o'clock position of the listener; and elevationally, both are positioned substantially on said horizontal plane;

a third two of said speakers are positioned so that:

azimuthally, one is approximately 135 degrees to the left of and the other is approximately 135 degrees to the right of the 12 o'clock position of the listener; and elevationally, both are positioned substantially on said horizontal plane;

a fourth two of said speakers are positioned so that:

azimuthally, one is approximately 90 degrees to the left of and the other is approximately 90 degrees to the right of the 12 o'clock position of the listener; and elevationally, both are positioned above said horizontal plane; and

a fifth two of said speakers are positioned so that:

azimuthally, one is approximately 90 degrees to the left of and the other is approximately 90 degrees to the right of the 12 o'clock position of the listener; and elevationally, both are positioned below said horizontal plane.

49. (Previously Presented) The method of Claim 48 further comprising at least two additional speakers.

50. (Previously Presented) The method of Claim 49 wherein:

a sixth two of said speakers are positioned so that:

azimuthally, one is approximately 172 degrees to the left of and the other is approximately 172 degrees to the right of the 12 o'clock position of a listener; and

elevationally, both are positioned substantially on a horizontal plane that intersects the listener's ears.

51. (Cancelled)

52. (Currently Amended) A method for producing an encoded signal ("S_{out}") representative of an input sound field, comprising the steps:

providing a microphone array for receiving the input sound field and producing therefrom a microphone signal ("P_{in}") representative of the input sound field wherein P_{in} comprises B-format channels, an FL (front left) channel, and an FR (front right) channel; producing S_{out} from P_{in} wherein S_{out} comprises an ITU-compatible six channel signal wherein S comprises the quantities:

$$\begin{vmatrix} s(L,FL) & s(L,FR) & s(L,W) & s(L,X) & s(L,Y) & s(L,Z) \\ s(R,FL) & s(R,FR) & s(R,W) & s(R,X) & s(R,Y) & s(R,Z) \\ s(C,FL) & s(C,FR) & s(C,W) & s(C,X) & s(C,Y) & s(C,Z) \\ s(SC,FL) & s(SC,FR) & s(SC,W) & s(SC,X) & s(SC,Y) & s(SC,Z) \\ s(SL,FL) & s(SL,FR) & s(SL,W) & s(SL,X) & s(SL,Y) & s(SL,Z) \\ s(SR,FL) & s(SR,FR) & s(SR,W) & s(SR,X) & s(SR,Y) & s(SR,Z) \end{vmatrix}$$

wherein:

L represents a left speaker channel for an ITU-compatible six channel signal;

R represents a right speaker channel for an ITU-compatible six channel signal;

C represents a center speaker channel for an ITU-compatible six channel signal;

SC represents a surround center speaker channel for an ITU-compatible six channel signal;

SL represents a surround left speaker channel for an ITU-compatible six channel signal;

SR represents a surround right speaker channel for an ITU-compatible six channel signal;

FL represents the front left speaker channel;

FR represents the front right speaker channel;

W represents a B-format channel;

X represents a B-format channel;

Y represents a B-format channel;

Z represents a B-format channel;

wherein

$s(\alpha, \beta)$ represents a transformation quantity relating the respective α and β channels, and

~~The method of Claim 51~~ wherein the hybrid microphone array is comprised of:

at least 6 microphones; and a substantially ellipsoidal shaped baffle.

53. (Previously Presented) The method of Claim 52 wherein four of said microphones are arranged in a tetrahedron.

54-55. (Cancelled)

56. (Currently Amended) The method of Claim ~~55~~ 52 wherein S comprises the following approximate quantities:

$$\begin{vmatrix} .850 & 0 & 0 & 0 & 0 & 0 \\ 0 & .850 & 0 & 0 & 0 & 0 \\ 0 & 0 & .601 & .736 & 0 & .425 \\ 0 & 0 & .601 & -.736 & 0 & .425 \\ 0 & 0 & .601 & -.368 & .638 & -.425 \\ 0 & 0 & .601 & -.368 & -.638 & -.425 \end{vmatrix}$$

57. (Currently Amended) The method of Claim ~~55~~ 52 wherein S comprises the following approximate quantities:

$$\begin{vmatrix} .850 & 0 & 0 & 0 & 0 & 0 \\ 0 & .850 & 0 & 0 & 0 & 0 \\ 0 & 0 & .601 & .736 & 0 & -.425 \\ 0 & 0 & .601 & -.736 & 0 & -.425 \\ 0 & 0 & .601 & -.368 & .638 & .425 \\ 0 & 0 & .601 & -.368 & -.638 & .425 \end{vmatrix}$$

58. (Currently Amended) The method of Claim ~~55~~ 52 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.736	0	.425
0	0	.601	−.425	0	.736
0	0	.601	−.425	.736	0
0	0	.601	−.425	−.736	0

59. (Currently Amended) The method of Claim ~~55~~ 52 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	−.425	0	.736
0	0	.601	−.531	.638	−.184
0	0	.601	−.531	−.638	−.184

60. (Currently Amended) The method of Claim ~~55~~ 52 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.425	0	−.736
0	0	.601	−.850	0	0
0	0	.601	−.106	.638	.552
0	0	.601	−.106	−.638	.552

61. (Currently Amended) The method of Claim ~~55~~ 52 wherein S comprises the following approximate quantities:

.850	0	0	0	0	0
0	.850	0	0	0	0
0	0	.601	.850	0	0
0	0	.601	0	0	.850
0	0	.601	−.368	.736	.213
0	0	.601	−.368	−.736	.213

62. (Cancelled)

63. (Previously Presented) In a system for producing a 2D output sound field that is a function of an input sound field, where the system includes a microphone for receiving the input sound field and producing therefrom a microphone signal comprising B-format channels, an encoder for receiving the microphone signal and producing therefrom an encoded signal comprising an ITU-compatible six channel signal, and a first plurality of speakers arranged in a 2D configuration for receiving the encoded signal and producing therefrom the 2D output sound field, the improvement comprising:

a microphone array in place of said microphone wherein said microphone array receives the input sound field and produces therefrom a microphone array signal representative of the input sound field wherein the microphone array signal comprises B-format channels, an FL channel, and an FR channel; said encoder

further comprising circuitry for providing said encoded signal from said microphone array signal; a decoder for producing a decoded signal from said encoded signal wherein said decoded signal comprises B-format channels, an FL channel, and an FR channel; and a second plurality of speakers in addition to the first plurality of speakers, said first and second plurality of speakers arranged in a 3D configuration and receiving said decoded signal and producing therefrom a 3D output sound field.

64. (Previously Presented) The system of Claim 63 wherein the hybrid microphone array is comprised of:

at least 6 microphones; and a baffle including a substantially ellipsoidal structure.